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Condom use during sexual assault☆

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ABSTRACT

This study examines questions about forced unprotected sex. Study objectives include assessing the prevalence of condom use in sexual assault and improving our understanding of the correlates of condom use in sexual assault. We analyze 841 sexual assault complaints reported to three law enforcement agencies. Descriptive data are used to assess the prevalence of condom use in sexual assault and to examine the contextual factors associated with condom use in sexual assault. We conduct logistic regression analysis to examine motivations for condom use during sexual assault. Condom use prevalence rates across the sites range from 11.7% to 15.6%. Few differences exist across jurisdictions regarding the correlates of condom use. Condom use during sexual assault appears to be motivated by three contextual factors. Younger suspects and suspects who use a weapon during assaults are more likely to use a condom. The suspect's use of alcohol is negatively related to condom use. The low rates of condom use found in this study, coupled with the dangers of unprotected sexual contact, suggest that public health efforts must address the needs of victims of sexual assault more carefully.

1. Introduction

In 2008, an estimated 164,240 women and girls in the United States reported being victims of sexual assault.[1] Victims of sexual assault are most often female, between the ages of 12 and 24, and often victimized by someone they know.[1] The dangers of unprotected intercourse, including unwanted pregnancy and sexually transmitted infections (STIs), emphasize that condom use during sexual assault is a critical factor affecting the reproductive and physical health of women and girls. Consistent condom use has been found to reduce the risk of STIs, including chlamydia,[2] gonorrhea,[2] and human immunodeficiency virus (HIV).[3] In incidents of sexual assault; however, condom use is unlikely,[4,5] which significantly affects the ability of victims to protect themselves from potentially fatal infections and unwanted pregnancy.

The threat of contracting an STI or experiencing an unwanted pregnancy as a consequence of sexual assault is unknown. This is partly due to crime underreporting and to the difficulty in determining the origins of the infection or pregnancy, as some victims may have acquired the infection or become pregnant prior to the assault. Research has found that sexual assault victims are a population at risk of having STIs[6] including syphilis,[7] gonorrhea,[7,8] chlamydia,[8] trichomonas vaginalis,[8] vaginal candidiasis,[9] and bacterial vaginosis.[8,9] In addition, published data on the sexual behavior of those convicted of sexual assault indicates that they are at high risk for STIs.[10] This relationship is further complicated by the sexual behaviors that are correlated with risks of infection.[11] Sexual assault has been linked to risky sexual behavior,[12,13] and there is evidence that sexual assault victims are more likely to engage in unprotected vaginal and anal intercourse, have multiple partners, and participate in HIV-related behavior.[11,13,14] STIs not only impact the health of the person who has contracted the infection, but they can cause short and long term financial burdens.[15,16] The threat of unwanted pregnancy is another consequence of unprotected sexual assault.[20–22] Like STIs, unwanted pregnancy can greatly impact women's health and cause short and long term financial burdens.[23]

Despite its importance, the use of condoms in sexual assault has received little empirical attention. Existing research includes anecdotal evidence discussing one criminal case where a condom was recovered and used to identify a suspect,[24] clinical studies of

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rape victims,[25] self-report questionnaires of perpetrators,[5] and interviews of rape crisis counselors and prosecutors.[4] Studies regarding condom use and sexual assault have resulted in mixed findings and are not clear about the prevalence of condom use in sexual assault cases. While some findings indicate that approximately half of perpetrators use condoms during sexual assault,[26] other research suggests that sexual offenders rarely or never use condoms during forced sex.[4,5] Existing studies have major limitations. First, investigations of condom use in sexual assault have found diverse prevalence rates,[4,26,27] most likely reflecting the use of small samples, different study foci, and differing analytic strategies.[4,5,25,26,28,29] Second, extant research has generally limited investigation to one study site.[5,25,26,29] Lastly, the most comprehensive examination of condom use in sexual assault has specifically focused on forced sex and condom use within intimate partnerships,[26,28–30] drastically limiting the ability to draw conclusions about condom use among nonintimate sexual assault. The lack of empirical evidence and knowledge regarding condom use in sexual assault is not because the topic is unimportant. Understanding condom use in sexual assault is necessary to inform policy and practice regarding risks of STIs and pregnancy, as well as to guide post-assault treatment of victims.

The current study uses police investigative reports. Police reports provide the opportunity to examine large geographical locations with recent and detailed data. Yet, no study to date has used such data. This can be attributed to lack of access to such reports and the laborious preparation necessary to use police reports. For example, once access to the reports is granted and information that could identify victims, suspects, and law enforcement officials is redacted, coders must read through lengthy and detailed narratives and correctly code numerous variables. There are two main objectives of this study: (1) to assess the prevalence of condom use in sexual assault; and (2) to improve our understanding of the correlates of condom use in sexual assault. Understanding the prevalence and contextual factors of condom use during sexual assault will increase understanding about sexual assault more broadly (e.g. offenders, risk of STIs, risk of pregnancy).

Given the dynamics surrounding sexual assault, we hypothesize that:

1. Prevalence rates of condom use during sexual assault will be lower than their use by the general population.
2. Nonstranger offenders will be less likely to use condoms because they know the sexual history of the victim (which decreases the risk of contracting STIs) and can argue consent (which decreases fears about leaving DNA). Stranger offenders will be more likely to use condoms due to fears of contracting STIs and leaving DNA.
3. Suspects who consume alcohol during the assault will be less likely to use condoms due to low self-control.

2. Methods

2.1. Sample

In this study, we analyze 841 sexual assault complaints that were reported to the Los Angeles Police Department (LAPD), the Los Angeles County Sherriff's Department (LASD), and the St. Louis Metropolitan Police Department (SLMPD). The Los Angeles case files included the initial crime report prepared by the responding officer, all follow-up reports prepared by the assigned detective, the district attorney's reason for filing or rejecting the charges, and the results of the forensic medical exam of the victim. The St. Louis case files included the initial crime report and supplemental reports.

From the LASD we obtained case files for all sexual assaults reported in 2008 ($N = 543$). Due to the large number of cases reported to the LAPD in 2008, we selected a stratified random sample of cases ($N = 401$). To ensure an adequate number of cases from each of the LAPD's 19 divisions, as well as an adequate number of cases from each case clearance category (i.e. arrest, exceptional means, investigation continuing, and unfounded), the sample was stratified by LAPD division and, within each division, by the type of case clearance. For the St. Louis study, all sexual assault cases that were reported in 2004 ($N = 168$) were used in the analysis.

The case files were first examined by the authors to ensure that the victims described assaults involving penile penetration (i.e. vaginal penetration, sodomy, and/or oral copulation of the suspect). Of the 1112 sexual assault cases provided by LAPD, LASD, and SLMPD, 271 were excluded from analysis because the case files outlined incidents that did not involve penile penetration. For example, cases where victims reported solely digital penetration or fondling were excluded for not meeting study criteria.

2.2. Development of the coding system and data analysis

Two trained teams of coders, one for each study area, reviewed the corresponding case files and coded more than 200 separate variables for each case based on multiple readings of the case narratives. Cases were coded for variables relating to victim and suspect characteristics, assault characteristics, the victim's experiences of sexual assault, relationship characteristics between the victim and suspect, the victim's experiences with the criminal justice system, and the combined influences of characteristics that result in the mobilization of law enforcement response. We also reviewed the case files to determine the circumstances under which condoms were used in committing sexual assault. This study specifically examines the following variables by agency and condom use: suspect/victim relationship, relationship characteristics (e.g. prior sexual encounters), weapon use, ejaculation, rape kits, victim medical treatment, and victim and suspect characteristics.

3. Results

Prevalence rates of condom use ranged from 11.7% to 15.6%. Table 1 provides the descriptive statistics for the use of condoms in sexual assault by agency. The absence of a condom represents the most common scenario found in Los Angeles (LAPD: $N = 155$, 58.7%; LASD: $N = 268$, 62.3%). Alternatively, the most common scenario found in St. Louis is missing information on this variable. In this section we describe case characteristics regarding condom use among agencies and present the results of the logistic regression.

3.1. Characteristics of cases involving condom use: all agencies

Characteristics of cases involving condoms are presented in Table 2. Findings generally reveal similar patterns across cities regarding condom use. Case factors that had similar frequencies across agencies included suspect/victim relationship, prior sexual

Table 1
Condom use by agency.

	LAPD ($N = 264$)		LASD ($N = 430$)		SLMPD ($N = 147$)	
	N	%	*N*	%	*N*	%
Yes	31	11.7%	58	13.5%	23	15.6%
No	155	58.7%	268	62.3%	49	33.3%
Unknown	78	29.6%	104	24.2%	75	51.0%

Table 2
Characteristics of cases involving condoms.

	LAPD ($N = 31$)	LASD ($N = 58$)	SLMPD ($N = 23$)
Case characteristics			
Suspect/victim relationship			
Strangers	35.5%	15.5%	30.4%
Nonstrangers	64.5%	75.9%	69.6%
Family	.0%	8.6%	.0%
Prior sexual encounter			
No	66.7%	61.8%	80.0%
Yes	33.3%	38.2%	20.0%
Weapons			
No	83.9%	84.5%	65.2%
Yes	16.1%	15.5%	34.8%
Weapon type			
Firearms	80.0%	55.6%	25.0%
Other	20.0%	44.4%	75.0%
Alcohol Involved[a]			
Victims	32.3%	17.2%	–
Suspects	33.3%	21.4%	–
Drugs involved[a]			
Victims	19.4%	10.3%	–
Suspects	22.2%	19.6%	–
Suspect ejaculated	90.5%	87.8%	83.3%
Rape kit obtained	67.7%	56.9%	41.2%
Medical treatment	44.4%	14.3%	30.8%
Victim characteristics			
Mean age	26.5	20.4	23.4
Under 18	29.0%	51.7%	42.9%
18–24	25.8%	27.6%	23.8%
25 and over	45.2%	20.7%	33.3%
Race/ethnicity			
White	22.6%	20.7%	26.1%
Black	35.5%	41.4%	73.9%
Latina/hispanic	38.7%	36.2%	.0%
Other	3.2%	1.7%	.0%
Suspect characteristics			
Mean age	30.8	26.3	27.1
Under 18	6.7%	12.1%	15.4%
18–24	23.3%	43.1%	53.8%
25 and over	70.0%	44.8%	30.8%
Race/ethnicity			
White	9.7%	20.7%	13.0%
Black	48.4%	41.4%	87.0%
Latino/hispanic	38.7%	32.8%	.0%
Other	3.2%	5.1%	.0%

[a] Insufficient SLMPD data.

encounter, weapon use, suspect ejaculation, rape kits, and the age of the parties involved.

The most common type of victim/suspect relationship in cases involving condom use was non-strangers/acquaintances (LAPD: 64.5%; LASD: 75.9%; SLMPD: 69.6%), followed by strangers (LAPD: 35.5%; LASD: 15.5%; SLMPD: 30.4%). Overall, condoms were only used in five cases (LASD) involving family members, representing the least common victim/suspect relationship. In all three agencies, cases where a condom was used involved a victim that was, on average, younger than the suspect. The majority of cases where condoms were used *did not* involve prior sexual encounters between the victim and suspect (LAPD: 66.7%; LASD: 61.8%; SLMPD: 80.0%).

The majority of cases involving condom use *did not* involve the use of a weapon (LAPD: 83.9%; LASD: 84.5%; SLMPD: 65.2%). In addition, the suspect ejaculated in the vast majority of cases involving condom use (LAPD: 90.5%; LASD: 87.8%; SLMPD: 83.3%) and approximately half of the victims in these cases underwent a forensic medical exam (LAPD: 67.7%; LASD: 56.9%; SLMPD: 41.2%).

3.2. Characteristics of cases not involving condom use: all agencies

Compared to cases involving condom use, findings revealed fewer contextual similarities among agencies regarding cases where condoms were not used. Results revealed different patterns among agencies regarding prior sexual encounters and weapon use.

The majority of LAPD cases where a condom was not used involved prior sexual encounters between the victim and suspect (58.6%). However, the majority of LASD and SLMPD cases where a condom was not used *did not* involve prior sexual contact between parties (53.6% and 82.6%, respectively). In addition, whereas Los Angeles cases where condoms were not used were less likely to involve weapons (LAPD: 89.7%; LASD: 90.7%), St. Louis cases were *more likely* to involve weapons (51.0%).

3.3. Correlates of condom use

Using the Los Angeles data (LAPD and LASD), we conducted logistic regression analysis to examine the "CSI effect" and STI effect, as well as to investigate motivating factors for condom use during sexual assault (the St. Louis data were excluded from this portion of analysis due to missing data.) The CSI effect involves expectations about the collection and use of forensic evidence that result from popular television crime dramas.[31] We anticipated that this effect would increase the use of condoms due to fears of leaving DNA on the victim, and, thus, enhancing the chances of arrest and conviction. In addition, condom use during sexual assault may increase due to fears of contracting an STI (i.e. STI effect).

Given the scarcity of research investigating condom use in sexual assault, we selected theoretically relevant variables for the analysis of condom use. We included a variable that measured whether the victim went to the suspect's residence before the assault. This variable was included on the grounds that the suspect would be more likely to have access to a condom and thus would be more likely to use one. We also included two variables that measured relationship characteristics including, (1) whether the suspect and victim were nonstrangers and (2) whether the suspect and victim were intimates. These variables were included to test whether nonstranger or intimate suspects would be less likely to use condoms (nonstrangers and intimates can argue consent as a defense; therefore, decreasing motivations for condom use). We included variables that measured whether the suspect and/or victim were consuming alcohol at the time of the incident and whether a weapon was used during the sexual assault. Lastly, we include variables that measured whether the suspect or victim were under the age of 21 at the time of the assault.

Table 3
Contextual factors predicting condom use: results of the logistic regression analysis.

	B	S.E	Exp(*B*)
Weapon used during assault	**.888***	.401	2.430
Relationship characteristics			
Nonstranger relationship	.283	.390	1.327
Suspect and victim are intimate partners	.200	.432	1.221
Suspect characteristics			
Suspect is under 21 years of age	**.678***	.339	1.971
Suspect drinking alcohol	**−.820***	.413	.440
Victim characteristics			
Victim is under 21 years of age	.285	.327	1.330
Victim drinking alcohol	.555	.442	1.742
Victim went to suspect's residence	.393	.346	1.482
Constant	−1.989	.394	.137

* = $P < .05$.

The results of our analysis of condom use are presented in Table 3. These data show that condom use during sexual assault appears to be motivated by three contextual factors. Younger suspects and suspects who used a weapon during the assault were more likely to use a condom. As predicted, suspects who consumed alcohol at the time of the incident were less likely to use a condom.

4. Discussion

This study contributes to prior research examining condom use in sexual assault in several important ways. Our findings highlight an important nexus between the criminal justice and health care systems that affect public health.

The current study overcomes major limitations observed in existing research on condom use in sexual assault. First, our study overcomes small sample size limitations by using a large sample of police investigative reports.[5,24,26,28–30] Second, previous studies have not assessed the prevalence of condom use during sexual assault incidents or have focused on the perpetrator's condom use in general (e.g. condom use behavior pre and post assault).[28,29] The present study addresses these limitations by focusing on condom use during the incident. Third, the most comprehensive investigation of condom use during sexual assault has specifically focused on forced sex and condom use within intimate partnerships.[26,28–30] The current study overcomes this limitation by using cases that represent various kinds of victims (e.g. strangers, nonstrangers). Lastly, the current study includes a comprehensive investigation of the correlates of condom use in sexual assault. Understanding the prevalence and contextual factors of condom use during sexual assault is necessary to inform policy and clinical and legal practice.

Our data indicate that condom use is motivated by three contextual factors. First, not surprisingly, the suspect's use of alcohol is negatively related to condom use. This finding is consistent with previous research.[5,27] Second, younger suspects are more likely to use condoms during sexual assault. This finding is normative for the population and consistent with previous findings that younger males are more likely to use condoms.[32] Lastly, incidents involving weapons are more likely to involve condom use. This finding can be attributed to the increased levels of suspect control that result from weapon use; it is unlikely that victims would resist in the presence of a weapon, facilitating condom preparation and use. These findings provide preliminary evidence regarding the motivating factors of condom use during sexual assault. However, this topic warrants further examination. In order to advance knowledge regarding sexual assault health outcomes, law enforcement officers and health care service providers who come into contact with victims (e.g. SANEs and emergency room doctors) should routinely ask about condom use.

The prevalence rates found in this study are lower compared to the prevalence of condom use by the general population during the same time period. Research has found that 22.5% of unmarried men and 19.8% of unmarried women in the United States reported consistent condom use (always using a condom during intercourse).[33] The lack of condom use in our sample is noteworthy. More than half ($n = 472$, 56.1%) of the victims reported that condoms were not used during the assault. This is problematic when considering that women are at greater risk of contracting an STI during heterosexual sexual contact and one act of unprotected intercourse can result in infection.[34] The likelihood of becoming infected with an STI following one act of unprotected intercourse has been estimated to range from 1% (HIV) to 50% (gonorrhea).[33] Our results, coupled with national statistics and STI transmission research, suggest that public health efforts regarding the dangers of unprotected sex should also be targeted toward victims of sexual assault. Moreover, this study found that victims are likely to undergo a SART exam and/or receive medical treatment post assault. STI testing should be offered to sexual assault victims and provided at the patient's request. In addition, public health attention should focus on the formal process of responding to sexual assault and collecting post-rape information in the medical arena (i.e. SANE interviews, SART exams, emergency room visits). Health officials should increase educational messaging about the importance of seeking medical attention post sexual assault and the avenues in which services can be obtained. In addition, rape crisis center personnel, sexual assault hotline workers, and advocates should be specially trained about the dangers of unprotected contact to facilitate the delivery of information to victims.

Finally, this study reports a higher prevalence of condom use during sexual assault than previous studies.[4,25] It is possible that this is the result of the CSI effect. The CSI effect involves expectations about the use of forensic evidence that results from popular television crime dramas.[31] The CSI effect is generally considered problematic because research has found large discrepancies between the media portrayal of the criminal justice system and the realities of police work and criminal investigation.[35] In this study, the CSI effect may have contributed to an increased use of condoms, due to fears of evidence (i.e. semen) collection, possibly resulting in a lower transmission of infections. Although the CSI effect pertains to expectations surrounding the use of forensic evidence, its relevance in this study raises questions about public perceptions of the media and how such views impact public health. In addition, the higher prevalence rate of condom use during sexual assault might speak to the fear of infection.

It should be noted that our study relied on sexual assault cases that were reported to the LAPD, LASD, and SLMPD; therefore it is exploratory in nature and limited in generalizability. Because this sample represents cases that were reported to three law enforcement agencies, they are not necessarily representative of all sexual assaults reported to other agencies or sexual assaults that did not come to the attention of the legal system. Also, it should be noted that the Los Angeles and St. Louis data were collected during different years. As mentioned above, the St. Louis data had numerous cases where data were missing regarding condom use, representing a weakness in data collection. This suggests that law enforcement officers need to pay increased attention to the use of condoms during sexual assault. Officers need to routinely ask victims about condom use during their investigative interviews as this knowledge may prove useful to health care professionals. The Los Angeles data, however, had detailed information regarding condom use, as victims were interviewed by police personnel using standardized report formats. A final limitation of the present study includes the inability to verify the accuracy of the information in each case file. Although we were provided with a copy of each case, we cannot know if the information provided by the investigating officer accurately represents the involved parties' experiences.

The lack of condom use found in this study, coupled with the dangers of unprotected sexual contact, suggest that public health efforts need to respond to victims more carefully. Sexual assault STI transmission research has found rates ranging from 0 to 3% for syphilis,[7] 2–13% for gonorrhea,[7,8] 1.5% for chlamydia,[8] 12% for trichomonas vaginalis, 17% for vaginal candidiasis,[9] and 13–19.5% for bacterial vaginosis.[8,9] The direct cost of STIs in the United States has been estimated to be between $9.3–15.5 billion.[15,16] Direct costs include clinic and hospital visits, transportation to medical services, and drug treatment. Treating one person with HIV has been estimated at $119,000.[17] Costs for chlamydia patients have been estimated at $50 per episode.[18] Pelvic Inflammatory Disease (PID), an infection caused by chlamydial and gonorrheal bacteria, is

estimated to cost individual women $2150 over a lifetime.[19] However, additional costs for women who experience PID complications (e.g. ectopic pregnancy, chronic pelvic pain) can range from $1270–6840.[19]

The national sexual assault-related pregnancy rate is 5%.[20] In addition, 20% of intimate partner sexual assault victims report becoming pregnant after forced sex.[21] The relationship between condom use, sexual assault, and women's health is further complicated by the fact that victims of intimate partner sexual assault are more likely to terminate pregnancies that result from assault.[22] The annual direct costs of unintended pregnancy in the United States have been estimated at $5 billion.[23] These annual costs include $3.924 billion for births, $797 million for induced abortions, and $266 million for fetal losses (i.e. the death of a fetus at any stage during a pregnancy, not including induced abortions).[23] The individual average cost per unintended pregnancy is $1609.[23]

Overall, post assault STI and pregnancy testing should be offered to victims and provided at the patient's request. In addition, educational messaging should focus on the high likelihood of women contracting STIs from one unprotected heterosexual contact. However, in order to inform public health policy and promote accurate information transmission, further research into condom use during sexual assault is necessary.

Conflict of interest

The authors do not have any interests that might be interpreted as influencing the research or authorship of this article.

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Ethical approval

None.

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